

REMARKS

Claims 1-2 are pending.

In the present Amendment, Claim 1 has been amended to recite that the resin molded article is produced by injection molding. Support for the amendment is found, for example, in the first full paragraph on page 14 of the present specification.

Claim 1 has been further amended to recite that the molded article has an impact strength higher than one having the same components which had not been surface treated with a coupling agent. Support for the amendment is found, for example, in the paragraph bridging pages 11-12 of the present specification.

Claim 2 has been amended to recite “consisting of” language.

Claim 2 has been further amended to recite the content of polylactic acid, glass fiber and hollow glass balloon in the composition. Support for the amendment is found, for example, in the last full paragraph on page 10 of the present specification, the paragraph bridging pages 12-13 of the present specification, and the non-limiting working Examples disclosed in Table 1 at page 17 of the present specification. Accordingly, Claim 2 was amended for clarification purposes to delete the recitation of the total content of the glass fiber and the hollow glass balloon.

Claim 2 has also been amended to recite that the hollow glass balloon has been surface treated with a coupling agent. The amendment is *explicitly* supported by Claim 1, from which Claim 2 depends.

No new matter has been added, and entry of the Amendment is respectfully requested.

I. **REJECTION UNDER 35 U.S.C. § 103**

Referring to Section Nos. 4 and 5 at pages 2 and 3 of the final Office Action, Claims 1 and 2 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,573,340 (“Khemani”) in view of U.S. Patent No. 5,017,629 (“Wilson”) and U.S. Patent No. 5,412,003 (“Akiyama”).

Applicants traverse and respectfully request the examiner to reconsider in view of the amendment to the claims and the following remarks.

Khemani, Wilson and Akiyama, alone or in combination, do not disclose or render obvious the resin molded article recited by the present claims.

The present claimed subject matter achieves high impact strength in the resin composition by treating the hollow glass balloon with a coupling agent. None of the cited references disclose or fairly suggest that treatment with a coupling agent would improve impact strength.

For example, Wilson discloses a thermoplastic resin composite containing glass fibers and hollow spheres, and teaches that the hollow spheres have a low alkalinity to make the spheres compatible with polymer resin. See Wilson at col. 5, lines 45 to 54. Wilson is silent with respect to treatment with a coupling agent.

With respect to Akiyama, the reference discloses unsaturated polyester resin compositions containing hollow glass microspheres, wherein the hollow glass microspheres normally have an elution alkalinity of 0.10 meq/g. Further, the hollow glass microspheres are subjected to washing with an acid solution or a surface treatment with a coupling agent to reduce the elution alkalinity to less than 0.05 meq/g to improve moldability of the resin. A resin having

a high elution alkalinity suffers from difficult workability due to strong stickiness, which is indicated by “C” as described in column 6, lines 24 to 29 of Akiyama.

Wilson describes that the hollow glass spheres have a low alkalinity in order to improve compatibility with polymer resin. The alkalinity of the glass in Wilson is different from the elution alkalinity in Akiyama. Akiyama describes reducing the elution alkalinity to reduce the viscosity of the resin, resulting in the better moldability. On the other hand, Wilson suggests selecting a glass with a low alkalinity for the better compatibility of the glass hollow spheres with polymer resin. Therefore, Wilson and Akiyama cannot be combined with each other.

Even if it were proper to combine the teachings of Wilson and Akiyama, which it is not, the combination would not suggest the present claimed subject matter of a resin composition in which a hollow glass balloon has been treated with a coupling agent, thereby having a high impact strength.

In addition, amended Claim 2 recites the closed-ended transitional phrase “consisting of,” which excludes all unrecited components. The present claimed subject matter consists of “hard” biopolymers as the main component and contains no soft biopolymer.

In contrast, Applicants point out that Khemani teaches that materials with “hard” biopolymers as the main component *and not containing any “soft” biopolymer* have low elongation. The soft biopolymer in Khemani has a glass transition temperature of less than about -10°C, while the polylactic acid of present Claim 2 has a glass transition temperature of 50-60°C. In this regard, Khemani’s disclosure, which is directed to obtaining a film having a good elongation and a good “dead-fold” property, is quite different from the present claimed subject matter directed to an improved thermal resistance and specific weight. For example, claim 1 of

Khemani recites "a biodegradable polymer blend . . . suitable for formation into at least one of sheet or films." Khemani does not recite an injection-molded article.

Accordingly, a person having skill in the art with knowledge of Khemani would not have been motivated to produce a resin molded article employing no "soft" polymer.

**II. CONCLUSION**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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